CLAIMS

1. Trip system for an electrical switch, comprising a yoke of magnetic material, consisting of a yoke base part, a first yoke leg and a second supporting yoke leg, said first and second yoke legs extend in a mutual spaced relation and in the same direction from the yoke base part and transversally thereto, an armature from magnetic material bridging the free ends of the yoke legs and pivotably supported by the supporting yoke leg, a permanent magnet provided such that its magnetic field lines extend through a first magnetic circuit formed by the yoke and the armature, a coil mounted on the yoke and spring means engaging the armature, in which the armature is held in a first position under influence of the magnetic field of the permanent magnet against the spring force of the spring means, in which the armature lies against the free end of the first yoke leg and in which the armature can assume a second position under influence of the magnetic field developed by a current flowing through the coil and exceeding a predetermined limit value, in which the surfaces facing to each other of armature and free end of the first yoke leg are at a first air gap distance from each other, characterised in that the magnet is included in a second magnetic circuit formed by the yoke and the armature and which in the first position of the armature has a magnetic resistance being higher than that of the first magnetic circuit and is decreasing when the armature moves from the first to the second position.

2. Trip system according to claim 1, characterised in that the yoke base part is provided with a yoke base part extension, extending beyond the supporting yoke leg and emerging into a third yoke leg running spaced from the supporting yoke leg and in the same direction thereof, that the permanent magnet is added to the magnetic path of the yoke base part extension and third yoke leg and that the armature is extended and the free end face of the assembly of yoke base part extension, third yoke leg and permanent magnet overlaps at a second air gap distance when the armature is in the first position.

3. Trip system according to claim 1, characterised in that the armature has two legs, the one armature leg of which bridging the space between the first yoke leg and the supporting yoke leg and the second armature leg of which extending transversely to the

one armature leg and at a distance from the supporting yoke leg, in which a space between the surfaces facing to each other of the second armature leg and the supporting yoke leg remains for accommodating the permanent magnet with a second air gap.

Sub A17

4. Trip system according to claim 2 or 3, characterised in that the magnitude of the second air gap and the spring force of the spring means on the armature are selected such that in the first position of the armature the moment of the attracting force between armature and engaging yoke leg is bigger by a predetermined value than the sum of the moments of the attracting force at the location of the second air gap and the spring force acting on the armature, said moments are valid with respect to the armature pivoting point and that said value is related to the limit value of the coil current.

5. Trip system according to one of the claims 1-4, characterised in that the free end face of the supporting yoke leg and the surface facing thereto of the armature define a wedge-shaped space.

6. Trip system according to one of the claims 1-5, characterised in that the spring means are completely or partly released in the second armature position.

7. Trip system according to one of the claims 2-6, characterised in that the spring means are constituted by a compression spring engaging the armature part between supporting yoke leg and third yoke leg and bias the armature in the direction of decreasing of the second air gap.

8. Trip system according to claim 7, characterised in that the compression spring is a leaf spring engaging at one end against the armature part between supporting yoke leg and third yoke leg and is fixed at the other side in the housing of the trip system, in which in a position differing from the second position of the armature a leaf spring and the armature defines an angle.

9. Trip system according to claim 8, characterised in that the leaf spring engages a cam of the housing between the fixed end and the free end of the leaf spring.

Subs27

10. Trip system according to one of the claims 1, 2, 4-9, characterised in that the permanent magnet is accommodated in a recess in a house wall located between the free end face of the third yoke leg and the armature surface facing thereto.

11. Trip system according to claim 10, characterised in that the recess is accessible from the outside.

Subs27

12. Trip system according to one of the claims 1-11, characterised in that the supporting yoke leg and the first yoke leg has substantially the same length.

13. Trip system according to one of the claims 1-12, characterised in that the free end face of the first yoke leg is rounded.

14. Trip system according to one of the preceding claims, characterised in that the housing and coil holder are provided with mechanical guiding faces for the armature.

15. Trip system according to one of the preceding claims, characterised in that the armature has rounded corners at the ends.

16. Trip system according to one of the claims 1, 2, 4-15, characterised in that the armature part lies against the free end of the assembly of yoke base part extension, third yoke leg en permanent magnet with a bevelled surface in the second armature position.

17. Trip system according to one of the preceding claims, characterised in that the armature end engages a curved house part during the pivoting movement of the armature, the radius of said curvature corresponds to the radius of the path covered by the end of the armature located above the third yoke leg.

18. Trip system according to one of the preceding claims, characterised in that the permanent magnet is provided at its surface facing to the armature with a U-shaped pole shoe, the base of which extending parallel to said surface of the permanent magnet and the legs of which are running perpendicular to and in a direction of the said surface,

Sub 937

in which the armature is accommodated movable in a space defined by the base and the legs.
